In the Claims:

Please amend the claims as follows:

1. (Currently Amended) A method for maximizing group membership comprising:

a processor in communication with a memory containing information about vertices in a graph including a connectivity count;

updating, by ~~a~~ said processor, ~~a~~ the connectivity count of each vertex in ~~a~~ the graph after removing one vertex from said graph, wherein each vertex represents a single hardware component, and wherein the connectivity count of a vertex is a number of neighbors connected to the vertex;

~~placing vertices in decreasing order of connectivity based upon said calculated connectivity count of each vertex in said graph;~~

selecting a vertex with a least sum of connectivity counts of all its neighboring vertices from among all vertices having a same least connectivity count;

removing said selected vertex from the graph; ~~and~~

returning a grouping of interconnected vertices forming a clique ~~of completely interconnected vertices, wherein~~ when each vertex in said grouping is connected to each other vertex in said grouping~~, and wherein each vertex representing a node of a computer cluster and the clique forming an efficient operating cluster.~~;

for each removed vertex with a connectivity count equaling zero, returning a grouping consisting of the removed vertex with a connectivity count equaling zero and all its neighboring vertices removed in all previous iterations, said grouping forming a current eliminated clique;

comparing a number of vertices in said current eliminated clique with a number of vertices in each previously eliminated and stored clique; and

storing the current eliminated clique if the current eliminated clique has a size greater than a size of any of previously eliminated and stored clique.

2. (Currently Amended) The method of claim 1, ~~further comprising updating said connectivity count for all remaining vertices in said graph following removal of a single vertex from said graph~~ wherein each vertex represents a node of a computer cluster and the clique forms an efficient operating cluster.

3. Cancel

4. Cancel

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7. (Currently Amended) A system to determine a maximum group membership comprising:

a processor in communication with a memory containing information about vertices in a graph including a connectivity count;

the graph with at least two vertices;

a counter to calculate the connectivity count for each vertex in the graph, wherein each vertex represents a single hardware component, wherein the connectivity count of a vertex is a number of neighbors connected to the vertex;

a placement of each vertex in descending order of connectivity based on said calculated connectivity count;

a selection of a vertex with a least sum of connectivity counts of all its neighboring vertices from among all vertex with a same least connectivity count;

a removal of said selected vertex from the graph; and

a clique of completely interconnected vertices formed, wherein each vertex in the clique is connected to each other vertex in the clique~~, and wherein each vertex represents a node of a computer cluster and the clique forms an efficient operating cluster~~.

8. (Currently Amended)The system of claim 7, ~~further comprising an update of connectivity for each of said vertices subsequent to said removal of a vertex from said graph~~ wherein each vertex represents a node of a computer cluster and the clique forms an efficient operating cluster.

9. (Previously Presented) The system of claim 7, wherein removal of a vertex from said graph with said connectivity count is continuous until the clique of completely interconnected vertices is formed.

10. Cancel

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12. (Currently Amended) An article comprising:

a computer-readable recordable data storage medium;

a processor in communication with memory containing information about vertices in a graph including a connectivity count;

means in the medium for updating the connectivity for each vertex in the graph, wherein each vertex represents a single wherein each vertex represents a single hardware component, and the connectivity count of a vertex is a number of neighbors connected to the vertex;

means in the medium for placing vertices in decreasing order of connectivity based upon said calculated connectivity count of each vertex in said graph;

means in the medium for selecting a vertex with a least sum of connectivity counts of all its neighboring vertices from among all vertices having a same least connectivity count;

means in the medium for removing said selected vertex from the graph; and

a clique of completely interconnected vertices formed, wherein each vertex in the clique is connected to each other vertex in the clique~~, and wherein each vertex represents a node of a computer cluster and the clique forms an efficient operating cluster~~.

13. Cancel

14. (Previously Presented) The article of claim 12, wherein said means for removing a least connected vertex for removal from a clique in said graph includes comparing a connectivity count of said least connected vertex with a number of remaining vertices in the graph.

15. (Currently Amended) The article of claim 12, ~~further comprising means in the medium for updating connectivity for each remaining vertex in said graph subsequent to removal of said least connected vertex~~ wherein each vertex represents a node of a computer cluster and the clique forms an efficient operating cluster.

16. Cancel

17. Cancel

18. (Previously Presented) The method of claim 1, wherein the step of removing each selected vertex from the graph is continuous until the clique of completely interconnected vertices is formed.

19. (Currently Amended) The ~~method~~ system of claim 7 ~~1~~, further comprising:

~~for each removed vertex with a connectivity count equaling zero, returning~~ a grouping consisting of a ~~the~~ removed vertex with a connectivity count equaling zero and all its neighboring vertices removed in previous iterations, said grouping forming a current eliminated clique;

a ~~comparing~~ comparison between ~~the~~ a number of vertices in said current eliminated clique with ~~the~~ a number of vertices in each of previously eliminated and stored cliques;

~~storing~~ a stored record for the current eliminated clique if the current eliminated clique has ~~the~~ a size greater than ~~the~~ a size of any of previously eliminated and stored clique.

20. (Currently Amended) The ~~method~~ system of claim 19, further comprising a ~~determining~~ determination of a maximum clique in said graph by comparing the number of completely interconnected vertices left in the graph with the number of vertices in each of the stored

eliminated cliques.

21. (New) The article of claim 12, further comprising:

means in the medium for returning a grouping consisting of a removed vertex with a connectivity count equaling zero and all its neighboring vertices removed in previous iterations, said grouping forming a current eliminated clique;

means in the medium for comparing a number of vertices in said current eliminated clique with a number of vertices in each of previously eliminated and stored clique;

means in the medium for storing the current eliminated clique if the current eliminated clique has the size greater than the size of any of previously eliminated and stored clique.

22. (New) The article of claim 21, further comprising means in the medium for determining a maximum clique in said graph by comparing the number of completely interconnected vertices left in the graph with the number of vertices in each of the stored eliminated cliques.